Claims:

1. A holographic data storage medium comprising:

a first substrate portion;

a second substrate portion;

a holographic recording material sandwiched between the first and second substrate portions; and

an optically detectable tracking pattern formed on a surface of at least one of the substrate portions.

2. The holographic data storage medium of claim 1, wherein the optically detectable tracking pattern formed on the surface of at least one of the substrate portions comprises an optically detectable tracking pattern formed on a surface of the medium.

3. The holographic data storage medium of claim 1, wherein the optically detectable tracking pattern comprises a pattern formed on the surface of at least one of the substrate portions to define a periodic cycle of grating period.

4. The holographic data storage medium of claim 1, wherein the optically detectable tracking pattern comprises a grating pattern formed on the surface of at least one of the substrate portions to define stepped changes in grating period.

5. The holographic data storage medium of claim 1, wherein the optically detectable tracking pattern is defined by at least two grating patterns formed on the surface of at least one of the substrate portions to define a beat frequency.

6. The holographic data storage medium of claim 1, wherein the first and second substrate portions comprise thermoplastic material and the optically detectable tracking pattern comprises a replicated pattern on the surface of at least one of the substrate portions.

7. A holographic data storage system comprising:

a holographic medium comprising a first substrate portion, a second substrate portion, a holographic recording material sandwiched between the first and second substrate portions, and

an optically detectable tracking pattern formed on a surface of at least one of the substrate portions;

a reference beam to reconstruct a hologram stored in the holographic recording material; and

a probe beam to diffract off the optically detectable tracking pattern.

8. The holographic data storage system of claim 7, wherein the probe beam has a wavelength that is insensitive to the holographic recording material.

9. The holographic data storage system of claim 7, further comprising a tracking detector to detect diffracted light associated with the probe beam.

10. The holographic data storage system of claim 7, further comprising a data detector to detect the reconstructed hologram.

11. The holographic data storage system of claim 7, wherein the optically detectable tracking pattern formed on the surface of at least one of the substrate portions comprises an optically detectable tracking pattern formed on a surface of the medium.

12. The holographic data storage system of claim 7, wherein the tracking pattern comprises a pattern formed on the surface of at least one of the substrate portions to define a periodic cycle of grating period.

13. The holographic data storage medium of claim 7, wherein the tracking pattern comprises a grating pattern formed on the surface of at least one of the substrate portions to define stepped changes in grating period.

14. The holographic data storage medium of claim 7, wherein the tracking pattern is defined by at least two grating patterns formed on the surface of at least one of the substrate portions to define a beat frequency.

15. A method of determining a location on a holographic medium including a substrate and a holographic recording material comprising:

interrogating the holographic medium with a probe beam insensitive to the holographic recording material of the holographic medium; and

detecting diffracted light associated with the probe beam, the diffracted light being diffracted by a substrate of the medium to indicate a position on the medium.

16. The method of claim 15, wherein interrogating the holographic medium with the probe beam comprises moving the probe beam across a radial dimension of the medium, the method further comprising locating a track location on the medium, the track location being defined by a diffraction angle of the diffracted light associated with the probe beam.

17. The method of claim 15, wherein interrogating the holographic medium with the probe beam comprises moving the probe beam across a tangential dimension of the medium, the method further comprising locating a track location on the medium, the track location being defined by a diffraction angle of the diffracted light associated with the probe beam.

18. The method of claim 15, wherein the holographic data storage medium includes a first substrate portion, a second substrate portion, the holographic recording material sandwiched between the first and second substrate portions, and an optically detectable tracking pattern formed on a surface of at least one of the substrate portions.

19. The method of claim 18, wherein the optically detectable tracking pattern formed on the surface of at least one of the substrate portions comprises an optically detectable tracking pattern formed on a surface of the medium.

5

20. The method of claim 15, wherein interrogating the holographic medium with a probe beam includes interrogating the probe beam through the holographic medium.